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ABSTRACT

This report presents the status of programs designed to manage hazardous educational waste collections in secondary schools in the state of Illinois. Laboratory wastes, expired chemicals, unstable compounds, and toxic or flammable materials are accounted for in this document. The report contains an executive summary, a review of Illinois statutes that apply to hazardous waste collection, discussion of planning considerations, a description of a pilot project, a list of school requirements, waste categories and amounts collected, disposal costs, legislative options, and a discussion of pilot program validation. Tables and appendices provide additional information. (DDR)

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May 1997

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Hazardous Educational Waste Collections in Illinois

This report has been prepared for Gov. Jim Edgar and the 90th General Assembly in accordance with Section 22.47 of the Illinois Environmental Protection Act.

Illinois Environmental Protection Agency
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Division of Land Pollution Control
Solid Waste Management Section
Waste Reduction Unit

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How to Obtain Additional Information

To learn more about hazardous educational waste collections, household hazardous waste collections and the Partners for Waste Paint Solutions program, please call 217-785-8604, or write to:

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Hazardous Educational Waste Collections in Illinois

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Executive Summary

Section 22.47 of the Illinois Environmental Protection Act, effective Jan. 1, 1996, authorizes the Illinois Environmental Protection Agency to develop a program for removing hazardous educational wastes from the state's school laboratories and classrooms. The Agency is required to employ private contractors and make removals available to every school in Illinois at least once every three years.

Hazardous educational wastes are defined as laboratory wastes, expired chemicals, unstable compounds and toxic or flammable materials. These wastes do not include asbestos, lead-based paints, or wastes generated maintaining school buildings, grounds or vehicles.

To take advantage of an existing program and its contracts with hazardous-waste management companies, the Agency developed a hazardous educational-waste pilot project around its statewide, semiannual household hazardous-waste collections. Twenty-seven schools participated in the pilot project conducted during the fall of 1996. School employees transported enough hazardous educational wastes to fill 51 55-gallon drums; these wastes were properly disposed of at a cost of $24,319.

This report presents three options to the General Assembly to help shape future legislation for hazardous educational-waste collections. The Agency recommends Option 2.

- Option 1: Allow a single school to participate in each individual household hazardous-waste collection. This option could be accomplished with no increase in funding.

- Option 2: Allow multiple schools to participate in future household hazardous-waste collections. This option would require up to $1 million in new funding annually.

- Option 3: Establish a separate program to send hazardous-waste contractors to high schools to gather, pack and transport educational wastes for proper disposal. This option would require up to $5 million in new funding annually.

Hazardous Educational Waste Collections in Illinois

Section 22.47 Requires Removals

Many chemicals found in school classrooms and laboratories are hazardous and potentially dangerous. Surplus or outdated chemicals are particularly worrisome. In many instances, these substances are not being stored safely or being disposed of properly.

These concerns prompted the General Assembly to pass, and Gov. Jim Edgar to sign into law, Public Act 89-300, instructing the Illinois EPA to develop a program for collecting "hazardous educational waste" from the state's school laboratories and classrooms. The Agency is required to employ private contractors and make removals available to every school in Illinois at least once every three years.

The new law, effective Jan. 1, 1996, created Section 22.47 of the Illinois Environmental Protection Act. This provision authorizes the Agency to use monies from the Solid Waste Management Fund or the General Revenue Fund to remove hazardous educational wastes. These are defined as laboratory wastes, expired chemicals, unstable compounds and toxic or flammable materials. Section 22.47 excludes wastes resulting from abating asbestos or lead-based paints, from maintaining school buildings, grounds or vehicles, or from other noncurriculum activities. The complete text of Section 22.47 is found in Appendix A (p. 9).

Planning Considerations

Although Section 22.47 authorized a way to pay for removing hazardous educational wastes, it was unspecific regarding spending limits; thus the Agency felt constrained to perform only a pilot project and to keep costs as low as possible. Initial planning considered the following three options:

- Option 1: Accept hazardous educational wastes during scheduled household hazardous-waste collections.

This option appeared to offer several efficiencies that would outweigh any perceived disadvantages. Since November 1989, the Agency has conducted an average of 12 household hazardous-waste collections each spring and fall, and has developed considerable experience managing these events. This expertise includes contracting with waste-industry professionals to assure the safe handling and proper disposal of hazardous materials.

Collection sites are selected to provide a balance of opportunities for citizens throughout the state. Such broad geographic distribution would make it convenient for many

schools to take their hazardous educational wastes to locations where specially trained personnel from Agency's Solid Waste Management Section's Waste Reduction Unit and from hazardous-waste management contractors would be awaiting their arrival.

Household hazardous-waste collections are always held on Saturdays as a convenience for the public; this scheduling could be viewed as an inconvenience by the school employees who would be required to take their hazardous educational wastes to the central receiving point. Also, accepting these wastes could lengthen delays for homeowners at some of the larger events, where waiting times can be an hour or more.

- Option 2: Set up separate collections to accept only hazardous educational wastes.

Holding weekday collections exclusively for hazardous educational wastes would eliminate Saturday delivery duties for school employees, but the added costs of duplicating all the steps required of household hazardous-waste collections had all the markings of an unwise allocation of limited Agency resources.

- Option 3: Dispatch contractors to schools to collect, pack and remove hazardous educational wastes.

This approach would be considered "institution friendly" because school employees would not have to pack and transport hazardous educational wastes to collection sites. However, sending contractors to remove hazardous educational wastes from schools would cost considerably more than Options 1 and 2. The Agency would also require up to a year to negotiate and execute new agreements with its contractors.

Pilot Project, Fall 1996

Mindful of funding constraints, the Agency decided to move forward with a pilot project that would evaluate the costs and complexities of collecting hazardous educational wastes along with household hazardous wastes.

As a first step, Waste Reduction Unit personnel reviewed an earlier inventory of hazardous materials found in the state's secondary schools, and then developed strategies for collecting these wastes during the fall of 1996.

Agency planners identified the high schools closest to each of the 12 sites scheduled for fall 1996 collections, contacted the appropriate administrators, and explained how their schools could dispose of their hazardous educational wastes.

Table 1: Combined Collections Hazardous Educational Waste/Household Hazardous Waste Illinois EPA Pilot Project, Fall 1996			
Dates	**Locations**	**Participating High Schools**	**Disposal Costs**
Aug. 24	Chicago		
Sept. 14	Glenview		
Sept. 21	East Hazel Crest	Thornwood	$290.00
Sept. 21	Decatur		
Sept. 28	St. Charles	St. Charles	$472.49
Oct. 5	Hickory Hills		
Oct. 5	West Frankfort	Frankfort Community	$566.81
Oct. 12	Henry		
Oct. 12	Sycamore	Sycamore	$67.25
Oct. 19	Woodstock		
Oct. 26	East Peoria	Peoria Public Schools East Peoria Limestone Community	$22,631.95
Nov. 2	Carlinville	Carlinville	$290.00
Total			**$24,318.50**

Significant Participation

In all, 27 schools in six communities accepted the Agency's offer. In five of these communities, only one high school participated; in the Peoria metropolitan area, 22 schools delivered their hazardous educational wastes to a single collection site. The East Peoria collection allowed the Agency to evaluate costs and potential problems that might occur in future multischool or large metro area collections.

Table 1 (p. 3) lists collection sites for the pilot project and schools that participated by delivering their wastes to these collections. Also included are the additional costs incurred that were directly related to the disposal of these hazardous educational wastes.

Participating Schools' Requirements

Prior to the scheduled household hazardous-waste collections, the participating schools were asked to submit to the Agency detailed descriptions of their hazardous educational wastes by type, amount and total number of containers to be transported. The Agency's Office of Chemical Safety screened these lists to rule out any need for intervention by Agency emergency response personnel or local bomb squad if it appeared potentially explosive compounds were being stored.

Following this review, the Agency mailed a set of instructions to the participating schools.

- To assure safety, only school-designated instructors would be allowed to package and transport the listed wastes.
- All known wastes were to be properly labeled and individually wrapped to guard against breakage.
- Unknown wastes were to be individually wrapped but kept separate from known wastes.
- School wastes were to be delivered to the collection site before 8 a.m. so as not to interfere with arriving homeowners; this early arrival would allow the Agency's on-site personnel sufficient time to confirm that the wastes being delivered matched the school's previously submitted list of hazardous educational wastes.

Waste Categories and Amounts Collected

Following on-site verification, school wastes were manifested and packed into 55-gallon drums for transport to proper disposal facilities.

Table 2 (p. 5) lists 12 categories of hazardous educational wastes and quantities of each category collected during the Agency's fall 1996 pilot project.

Table 2: Manifested Educational Wastes Collected, Fall 1996		
Types of Wastes	**55-Gallon Drums Filled**	**Compressed Gas Cylinders Collected**
Oxidizers	5.94	
Corrosives	9.96	
Flammable Liquids	9.44	
Flammable Solids	1.02	
Poison Liquids	19.15	
Poison Solids	2.72	
Hazardous Waste Liquids	0.09	
Hazardous Waste Solids	0.54	
Batteries	1.00	
Waste Oil	1.00	
Waste Reactives	0.18	
Compressed Gas Cylinders		20
Totals	**51.04**	**20**

Disposal Costs

The costs associated with this pilot program reflect only those expenses derived from appropriately safe disposal of hazardous educational wastes. Administrative expenses, including the contractor's expenses of traveling to the site, were absorbed by the Agency's household hazardous-waste program.

As shown in Table 1 (p. 3) the costs to dispose of school wastes, per event, ranged

from a low of $67.25 for Sycamore High School, to a high of $22,631.95 for the 22 schools participating in the Peoria metropolitan area collection.

The five *single-school* events collected a total of 7.44 55-gallon drums of hazardous educational wastes at a total cost of $1,686.55, for an average disposal cost per single-school collection of $337.31.

The 22-school event conducted in East Peoria collected a total of 43.6 55-gallon drums of hazardous educational wastes, plus 20 compressed gas cylinders. Here, the average disposal cost per school in a *multischool* collection was $1,028.73.

Overall, the average disposal cost per school, for all events, including single and multiple school participation, was $900.69.

Legislative Options

Section 22.47 of the Illinois Environmental Protection Act requires the Agency to include in this report recommendations that will allow the General Assembly to consider future legislative actions regarding hazardous educational-waste collections. The Agency recommends Option 2 (below):

- Option 1: With no increase in current funding for the household hazardous-waste program, the Agency could accept hazardous educational wastes from a single school during each scheduled collection. This approach could only serve about two dozen schools per year.

- Option 2. With increased funding of up to $1 million a year to the household hazardous-waste program, the Agency could allow several schools to deliver their hazardous educational wastes during each scheduled collection. This would expand the coverage to include more institutions but still would not serve the majority of the state's schools.

- Option 3. With increased funding of up to $5 million a year, the Agency could manage a separate hazardous educational-waste program dispatching hazardous-waste management contractors to Illinois schools to collect their hazardous educational wastes. This would serve many if not most of the state's schools, and would eliminate the need for designated instructors to pack and transport these wastes to a collection site.

Pilot Program Validation

Although the pilot program officially ended in late 1996, the Agency continued within the constraints of existing funding to accept hazardous educational wastes during its spring 1997 household hazardous-waste collections.

The reasons for continuing to accept hazardous educational wastes were fourfold: (1) To further validate the effectiveness of the program; (2) to apply the lessons learned from the fall 1996 collections; (3) to continue gathering data on problems associated with hazardous educational wastes; and (4) to refine cost data regarding the disposal of these wastes.

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Appendix A

Section 22.47 of the Illinois Environmental Protection Act
School District Hazardous Educational Waste Collection

Appendix B

Participating High Schools
Combined Hazardous Educational Waste/Household
Hazardous Waste Collections, Fall 1996

Appendix A: Section 22.47 of the Illinois Environmental Protection Act School District Hazardous Educational Waste Collection

a. The Agency shall develop, implement, and fund (through appropriations for that purpose from the General Revenue Fund) a program to collect school district hazardous educational waste from school districts and schools in the State. The program shall provide for the availability for collection, transportation, and appropriate management of hazardous educational wastes for each school district or school by private contractors at least every 3 years.

b. A school district or school may participate in a hazardous educational waste collection program by:

   1. Notifying the Agency of the hazardous educational wastes used by the school district or school and including the following information:

      A. Waste types.

      B. Waste volumes.

      C. Number of containers.

      D. Condition of containers.

      E. Location of containers.

   2. Maintaining wastes in the original containers, if practical.

   3. Labeling each container if contents are known.

   4. Following Agency instructions on waste segregation, preparation, or delivery for subsequent handling.

c. The Agency shall accept applications from school districts or schools throughout the year. The Agency shall designate waste haulers throughout the State qualified to remove school district hazardous waste at the request of a school district or school. By March 1 and September 1 of each year the Agency shall prepare a schedule of school districts or schools that have been selected for collections over the next 6 months. The selections shall be based on the waste types and volumes, geographic distribution, order of application, and expected costs balanced by available resources. The Agency shall notify each selected school or school district of the date of collection and instruction on waste preparation.

d. For purposes of this Section "hazardous educational waste" means a waste product that could pose a hazard during normal storage, transportation, or disposal generated from an instructional curriculum including laboratory wastes, expired chemicals, unstable compounds, and toxic or flammable materials. "Hazardous educational waste" does not include wastes generated as a result of building, grounds, or vehicle maintenance, asbestos abatement, lead paint abatement, or other non-curriculum activities.

e. By January 1, 1997, the agency shall submit a report to the General Assembly on the status of the school district hazardous educational waste collection program detailing the amounts, types, and locations of wastes collected, costs of the program, evaluation of the program, and recommendations for future legislative actions.

f. The Agency is authorized to use funds from the Solid Waste Management Fund to implement this Section.

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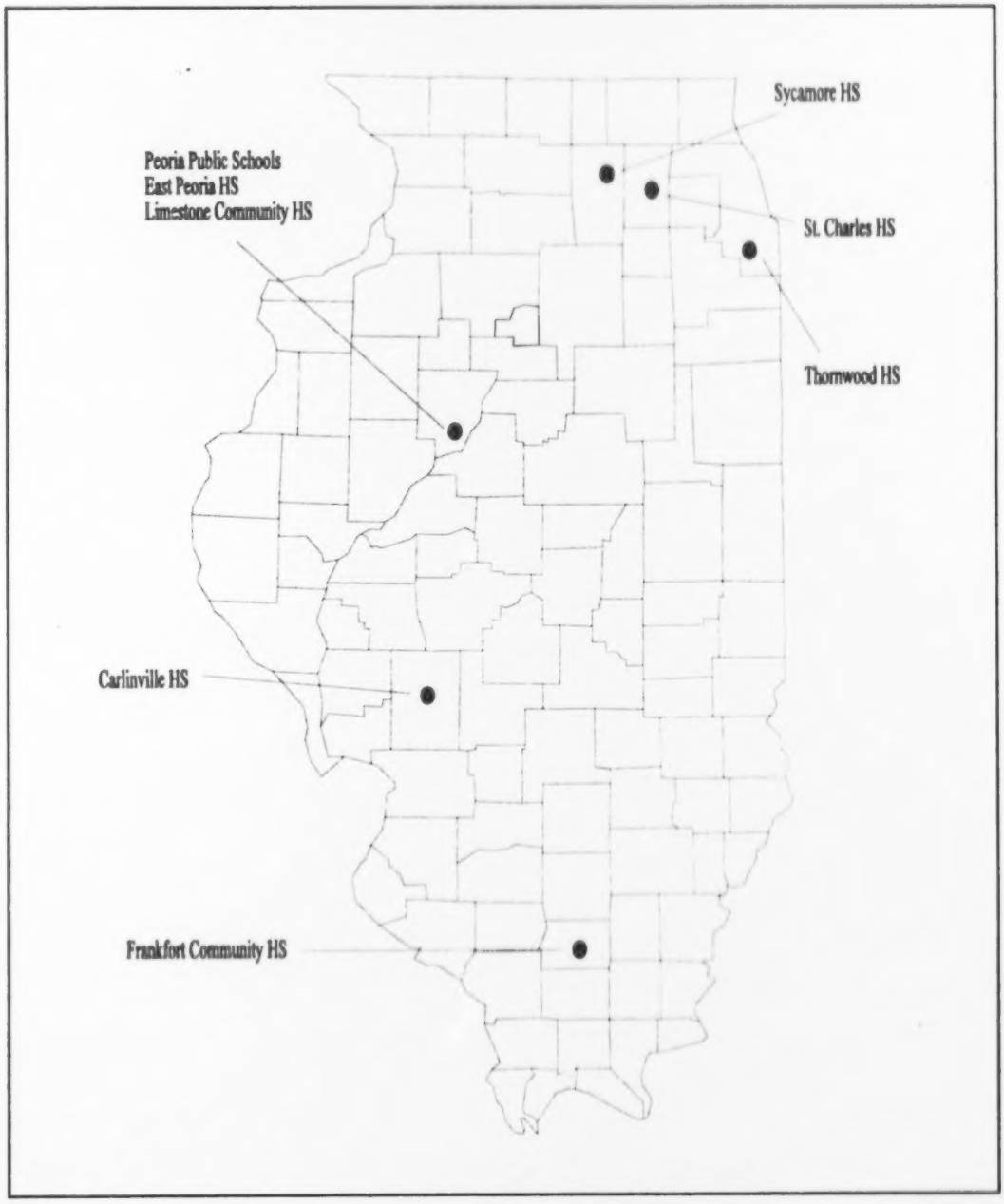
Appendix B: Participating High Schools, Combined Hazardous Educational Waste/Household Hazardous Waste Collections, Fall 1996



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15. Supplementary Notes

16. Abstract (Limit 200 words)

Section 22.47 of the Illinois Environmental Protection Act authorizes the Illinois Environmental Protection Agency to remove hazardous educational wastes (principally laboratory wastes, expired chemicals, unstable compounds and toxic or flammable materials) laboratory wastes, expired chemicals, unstable compounds and toxic or flammable materials) from the state's school laboratories and classrooms. The Act requires the Agency to employ private contractors and make removals available to every school in Illinois at least once every three years.

Accordingly, the Agency developed a pilot project within the constraints of existing funding limitations. The pilot project invited designated high-school instructors to deliver hazardous educational wastes to Agency-sponsored household hazardous-waste collections held statewide during the fall of 1996. Twenty-seven high schools participated. This report details the results of the pilot project and presents three options to the General Assembly to help shape future legislation for hazardous educational-waste collections.

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schools
chemical wastes

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Educational Waste

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